yet the body, pelvis and legs resisting delivery. The only possible explanation seemed to be a large fetal tumor. External palpation did not furnish any clue.

The next step to be taken was to explore as thoroughly as possible the cavity of the uterus and the retained portion of the child, and for this purpose the hand was slipped with considerable difficulty up along the baby's body until the fingers reached the level of the lower border of the ribs, where there could be felt a resistant band of hard contracted muscle about the body through which it was impossible to pass more than the tips of the fingers, and this only by depressing the soft tissues of the infant. Again it was evident that we were confronted with a contraction ring. One cubic centimeter of adrenalin was given at once, and a few moments later, with traction on the head and shoulders, the child slowly delivered. The infant was found to be an ascitic monster, with an abdomen measuring 40 centimeters in circumference and with a double hydronephrosis, and it was this distended abdomen that was caught behind the contraction ring.

Here again epinephrin seems to have been the instrument by which a serious situation was changed into one of very little moment.

COMMENT

These two cases are reported that we may call attention to the use of epinephrin in contraction rings; but they may also be used to bring out another suggestion. It would seem to the author that we are too prone to force the uterus in situations where, unknown to us, the unconscious nervous mechanism seems to realize that further expulsive effort may be useless or dangerous.

In the first instance, the very common practice of administering pituitrin in the third stage probably precipitated the contraction ring spasm in a uterus containing an immovable adherent placenta; while in the second case the laboring, overloaded uterus was whipped into a spasm with quinin. Neither of these labors were long nor exhausting, as is usually the case where a contraction ring develops; so that it seems reasonable to lay the blame on the oxytoxics for these two cases of contraction ring dystocia.

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PHARYNGO-ESOPHAGEAL DIVERTICULUM

By JOSEPH E. TILLOTSON, M.D.
Woodland

DIVERTICULUM of the pharynx is an acquired hernia of the mucosa and submucosa, between the fibers of the inferior constrictor muscle of the pharynx or between the fibers of the cricopharyngeous. The pouch develops in the middle part of the posterior wall. Anatomically the pouch is of pharyngeal origin, but its symptoms are referable to the esophagus which is stenosed through compression by the pouch.[1] The first case of this type was reported during the time of William Hunter, and the specimen is still preserved in the Hunterian Museum, Glasgow.[2] Since then cases have been reported at different times, though the lesion would seem to be relatively uncommon. In a collected series of 878 patients suffering from pharyngeal or esophageal lesions, McMillan[3] reported 3 per cent as pharyngeal diverticula. Carcinoma of the esophagus, the most common type lesion in this group, was ten times more frequent than the diverticulum.

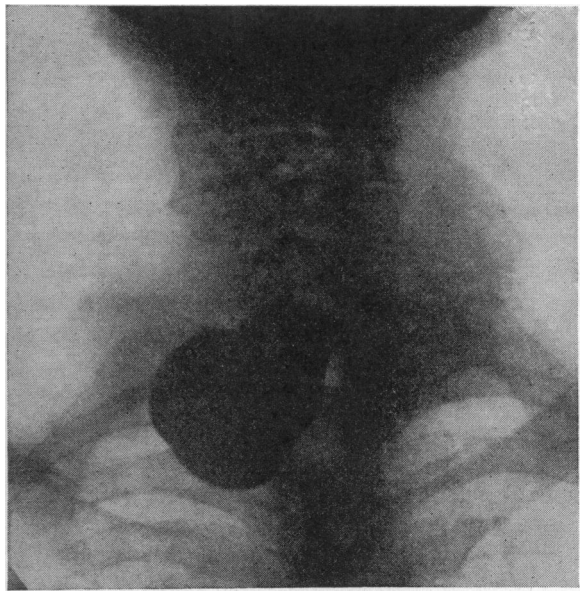

Fig. 1.—V. S. P. Age 59. Large pharyngo-esophageal diverticulum filled with barium mixture. It is directed toward the right side and extends into the upper mediastinum. There were marked symptoms; return of undigested food, delayed swallowing, paroxysms of coughing, and dyspnea.

REPORT OF CASE

V. P. S., male, age fifty-nine, was admitted to Yolo County Hospital, Woodland, California, January 25, 1936. Symptoms were of eight years' standing, and developed gradually until the last six months, when they progressed rapidly and became marked. The first difficulty noticed was that food seemed to catch on swallowing. Undigested pieces of food often returned into his mouth involuntarily. Other people would finish a meal, while he would only begin to eat. During the last six months there were frequent paroxysms of coughing and dyspnea. The patient lost weight; became apprehensive; was fearful of going to sleep; deliberately lived near an emergency hospital, where he might receive hypodermic injections of adrenalin, which temporarily relieved the asthma-like paroxysms of cough and dyspnea.

A nontender fullness in the lower right side of the neck was palpable; at times it changed in size. A barium film showed a well-defined pouch directed toward the right and extending into the upper mediastinum, shown in Figure 1. Dr. R. S. Tillotson examined the patient with esophageal speculum and reported the mouth of the diverticulum was entered by the instrument without difficulty, and that the subdiverticular opening of the esophagus was identified anteriorly.

At operation the anesthetic used was evipal intravenously. Preliminary to this a small rubber tube was passed through the nose to the stomach. An incision was made along the anterior border of the sternomastoid muscle, from the superior border of the thyroid cartilage to the suprasternal notch. The anterior jugular vein was ligated; the deep cervical fascia was divided; then the omohyoid muscle divided; the thyroid and larynx retracted medially, and the carotid vessels laterally. The sac was fairly easy to identify, as it came out from between the esophagus and the bodies of the lower cervical vertebrae toward the right and into the upper mediastinum. It was freed to its junction with the pharynx. When isolated, to the touch it felt very much like a normal gall-bladder and had a somewhat similar gross appearance. Since the pouch went fairly well into the

1 Jackson, Chevalier: Bronchoscopy and Esophagoscopy, Saunders, 1927.

2 Moynihan, Berkeley: The Surgical Treatment and Management of Pharyngo-Esophageal Diverticulum, Surg., Gynec., and Obst., 54:128 (Jan.), 1932.

3 MacMillan, A. S.: Statistical Study of Diseases of the Esophagus, Surg., Gynec., and Obst., 60:394-402 (Feb.), 1935.

mediastinum it was thought best to remove it by two stages. In doing this the general plan outlined by Lahey[4] was followed. At the first stage, the sac was anchored in the upper angle of the wound. Iodoform packing was inserted below. When the margins of the wound came together, about one inch of the pouch projected beyond the surface level of the skin. At the end of ten days, during which time the wound granulated in, the second stage of the operation was done under evipal anesthesia, and supplemented by a small amount of ether by inhalation near the end of the procedure. During the period between the stages of the operation the patient was fed by a small naso-stomach tube. At this second stage operation, the wound was opened at its upper angle and the sac isolated. To the writer the sac wall seemed thinner than at the first operation. Before the first-stage operation the pouch, over a long period of time, was under considerable distention and irritation by food. The period of rest, through the use of the naso-stomach tube, evidently allowed edema in the pouch to subside. The sac was ligated and excised at its neck, and interrupted sutures through remnants of fascia overlapped the pedicle. A small iodoform pack was inserted into the wound, and it was allowed to heal by granulation. Use of the naso-stomach tube was continued for five days. A fistulous tract resulted in the wound, from which small amounts of fluid and food were expelled with swallowing; but this tract completely closed by the tenth day following the operation.

There was complete relief of symptoms by the operation. The patient ate ravenously and gained ten pounds in two weeks. Difficult swallowing, cough, and dyspnea completely disappeared.

COMMENT

The writer has described a large pharyngo-esophageal diverticulum with marked symptoms. It was operated on with dramatic relief of symptoms. According to the recorded cases of these diverticula reported, the great majority protrude to the left, but this one protruded to the right. The large size of the sac facilitated its isolation. The sac was more thick-walled than might be expected. Microscopic study showed considerable muscle in its wall, which doubtlessly was an hypertrophy due to the long duration of food irritation and recurrent emptying. The sac extended well into the upper mediastinum, and this prompted a two-stage operation as a safeguard against mediastinal infection. There was not primary union following excision of the sac, but the fistulous tract healed without undue delay.

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GONORRHEAL TENOSYNOVITIS

By JAMES E. REEVES, M.D.
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IT can be assumed that gonorrheal infections of tendon sheaths are comparatively rare, as no mention of this complication is made in any of several standards works on urology consulted.

An occasional report appears in the literature; one case by Hayward,[1] and another by Murray and Morgan,[2] in which incision over affected tendon was productive of pus containing Gram-negative intracellular diplococci, morphologically N. gonorrhea.

Gonorrheal tenosynovitis of the long head of the biceps was diagnosed by Zadek[3] by means of stained sections of tissue, removed by operation.

There is no doubt that this complication has been observed by others and not deemed sufficiently important to report.

REPORT OF CASE

F. J. M., Corporal United States Marine Corps, white, male, age 27.

The patient was exposed to venereal disease in San Diego, California, on January 5, 1936, and took prophylaxis aboard his ship about four hours later. On January 12, 1936, he noticed burning and frequency of urination, followed in a few hours by a creamy urethral discharge. Coincident with appearance of the discharge, the patient bruised the dorsum of his right foot. When he reported to the Sick Bay he complained of marked pain in the foot, in addition to a urethral discharge. On admission, January 13, 1936, he presented the following picture: Temperature, 102 degrees Fahrenheit; pulse, 100; R, 18; urine normal; white blood cells, 19,500; bands, 13 per cent; segs., 50 per cent; lymphocytes, 27 per cent; mononuclears, 10 per cent. Smear of urethral discharge revealed many pus cells, many extracellular and few intracellular Gram-negative diplococci, morphologically, Neisseria gonorrhoeæ. Dorsum of right foot was swollen, tender, and erythematous. There was a profuse, creamy urethral discharge.

The patient was put to bed with foot elevated, and application of constant external heat. Anterior urethral irrigations with 1 to 10,000 potassium permanganate solution were begun.

Temperature for the first six days following admission varied from 99 to 102 degrees Fahrenheit, and the swelling and erythema over the dorsum of the foot gradually increased.

On January 19, 1936, a fluctuating area over the first of the four tendons of the extensor digitorum longus muscle was incised and yielded about 15 cubic centimeters of serosanguinous pus. Smear of the pus obtained showed many pus cells, and intracellular Gram-negative diplococci, morphologically Neisseria gonorrhoeæ.

A drain was inserted and radiotherapy treatments were begun and given twice daily, using two large, well-padded electrodes and 2,500 M. A. (resonance control) frequency, for twenty minutes. Following the second radiotherapy treatment (using the De Forrest laboratories' 250 watt 18 meter, 16.3 kilocycles apparatus), most of the pain disappeared.

From the day of admission until healing of the foot was complete, the white blood cell count averaged about 20,000 per cubic millimeter, and there was an increase in the number of segmented leukocytes. Normal total and differential white blood counts were obtained from the time healing was complete until he was discharged. As the drainage from the incision lessened, the daily afternoon temperature gradually became lower and reached normal ten days after incision, where it remained until discharge to duty.

Examination two weeks after discharge: found the urine clear, prostate and adnexa normal, no urethral stricture present, and normal motion present in the foot.

CONCLUSION

1. An unusual case of gonorrheal infection of a tendon sheath is presented.

2. Treatment with high frequency current appeared to limit destruction, relieve pain and facilitate healing.

3. Tendon injuries during the initial stages of gonorrhea may possibly precipitate gonorrheal tenosynovitis.

Medical Corps, U. S. Navy, U. S. S. Ranger.

4 Lahey, Frank H.: The Surgical Management of Pharyngo-Esophageal Diverticulum, Surg., Gynec., and Obst., 51:227-236 (Aug.), 1930.

1 Hayward, H.: Gonorrhea of Tendon Sheaths, Medizinische Klinik, 27:1683, 1931.

2 Murray, D. W. G., and Morgan, J. R. E.: Gonorrheal Tenosynovitis of the Hand, Canad. M. A. J., 32:374 (April), 1935.

3 Zadek, Isadore: Gonorrheal Tenosynovitis of the Long Head of the Biceps Brachii, J. A. M. A., 104:2176 (June 15), 1935.